Introduction and Summary
Chronometric dating of Late Pleistocene modern human dispersals from Africa, environmental changes, archaeological sites and technological transitions can be refined by intercontinental correlations with precisely dated stalagmites, marine isotope stages (MIS), ice cores and the Toba volcanic eruption isochron (Fig. 1).

• In Israel, correlation of Soreq Cave stalagmite with fauna isochrons at Qafzeh shows Level 21 burials date to 119-128 ka (MIS-5E) rather than 92 ka (MIS-5B).
• Lake Malawi core age-depth models revised using Toba volcanic ash (74 ka) shows megadroughts date to ~115-165 rather than 75-135 ka. A 2 kyr cold/arid event follows Toba in L. Malawi and Greenland ice cores.
• Toba ash in Pinnacle Point 5/6, South Africa, coincides with low sea level, reduced site use, and the first MSA backed blade industry, and a new form of technological organization.

Soreq Cave and Qafzeh Burials
Soreq and Pequinn Cave stalagmites have high δ13C and low δ18O values only during MIS-5E (119-128 ka), showing C4 grass cover and summer rainfall (Fig. 2). Qafzeh Cave Level 21 goat teeth (Figs. 3-4) also show high δ13C and low δ18O values only in Level 21 (Hallin et al. 2012), reflecting C4 grass cover and summer rainfall. Modern humans thus occupied the Levant during warm, humid MIS-5E. Africans expanded to the Levant during the era of least ecological resistance.

Notes
In response to comments and corrections suggested by Curtis Marean, two revisions have been made to the printed version of this paper presented at the Paleanthropology Society meetings poster session on April 10 2018:
1. In figure 8, the position of the first Toba ash shards has been adjusted upward by ~15 cm. Few artifacts or bones occur in the upper 30 cm of ALBS (Smith et al. 2018, figure 2), as shown in their supplemental videos 3 and 4.
2. The lithic industry found 30 cm above this occupation hiatus was described in this poster as the earliest representative of the Howiesons Poort (HP) lithic industry. Brown et al. 2012 describe this as “...an enduring advanced technology spanning 11,000 years.” The Pinnacle Point industry shares numerous features with the HP, including backed blade segments and notches. And the main justifications for excluding this assemblage from the HP seems to be that “SADBS segments are shorter and thinner than HP segments with no overlap in confidence intervals for width (p. 592),” and that notches are rare in the SADBS (p. 591). The authors note that this assemblage differs from the Klasies River HP, but is not significantly different from the HP at Montagu Cave (SI p.9). Based on data provided by Brown et al. 2012, the SADBS assemblage could be considered the earliest phase of an enduring HP industry that, like other named lithic industries, has synchronous and diachronic variability.